

WHAT IS CLAIMED IS:

1. A C-arm x-ray device, comprising:
 - an x-ray source;
 - a non-isocentric C-arm on which the x-ray source is positioned and that can be orbitally rotated, the C-arm x-ray device comprising:
 - a horizontal adjustment device configured to horizontally adjust the C-arm which enables an adjustment of the C-arm within a plane of the C-arm; and
 - a vertical adjustment device configured to vertically adjust the C-arm;
 - the horizontal adjustment device and the vertical adjustment device being configured such that they can automatically move the central x-ray beam of the x-ray source back into the isocenter, given an orbital rotation of the C-arm.
2. The C-arm x-ray device according to claim 1, further comprising:
 - an electronic control configured to control the horizontal and vertical adjustment devices.
3. The C-arm x-ray device according to claim 2, wherein the electronic control is fashioned as a computer.
4. The C-arm x-ray device according to claim 2, further comprising:
 - a characteristic storage that is connected with the electronic control.
5. The C-arm x-ray device according to claim 4, further comprising:
 - characteristics stored within the characteristic storage comprising values related to a horizontal and a vertical compensation movement,

compensation being made dependent on a change of a rotation angle of the C-arm.

6. The C-arm x-ray device according to claim 5, further comprising:
a mechanism configured for determining, before an automatic execution of a compensation movement, a limit of an adjustment range of the C-arm, dependent on a change of a rotation angle, a vertical position and a horizontal position of the C-arm.
7. A method for operating a 3-D C-arm x-ray device, comprising:
providing a non-isocentric C-arm on the x-ray device;
positioning an x-ray source for producing an x-ray beam at an isocenter within the C-arm; and
orbitally rotating the C-arm during an examination of the x-ray source and simultaneously adjusting at least one of a horizontal adjustment device and a vertical adjustment device of the C-arm so that the x-ray beam is moved to or stays at the isocenter.
8. The method according to claim 7, further comprising:
storing characteristics in a characteristic storage comprising values related to a horizontal and a vertical compensation movement.
9. The method according to claim 8, further comprising:
accessing the values related to the horizontal and vertical compensation movement with an electronic control; and
automatically making the adjustments with the electronic control dependent on a change of a rotation angle.